

Environmental  
Cooperative Agreement

# Annual Report 2005



**Blount  
Station**

**Madison, Wisconsin**



your community energy company

## INTRODUCTION

Madison Gas and Electric Company (MGE) signed an Environmental Cooperative Agreement (ECA) with the Wisconsin Department of Natural Resources (WDNR) on September 26, 2002. As a part of that ECA, MGE committed to providing the WDNR a Baseline Report by March 24, 2003, and annual performance evaluations thereafter. This is our third annual performance report.

During 2005, we met with our Community Environmental Advisory Group (CEAG) two times. We reviewed the 2004 Annual ECA Report and certification of Blount's Environmental Management System, seeking and receiving their input.

**Section 1** of this report includes a summary of some of our more notable achievements. During the past year, we have actively worked to implement the ECA commitments to move beyond regulatory compliance. We have made excellent progress.

During 2005, we accomplished the following:

- **Used approved waste material as a fuel source, replacing about three weeks of coal use.**
- **Purchased over 12,000 gallons of bio-diesel fuel, reducing carbon monoxide (CO), particulate matter, and other emissions from fleet vehicles up to 20%.**
- **Met requirements to maintain International Organization for Standardization (ISO) 14001 certification under the newest version of the 14001 standard.**
- **Installed equipment at 623 and 702 East Main Street to monitor the effectiveness of the storm water filtration system. The filtration system is expected to achieve a 70% sediment removal rate and control nutrients and heavy metals in stormwater.**
- **Continued to follow our noise concerns procedure to track any Blount noise complaints. No complaints were received in 2005.**
- **Offered to recycle mercury thermostats for customers and non-customers. Approximately 75 thermostats were collected containing about one-half pound of mercury.**
- **Sent about 21,000 tons of fly ash to Iowa for beneficial ash use rather than to landfill.**
- **Developed a replacement schedule to remove and recycle mercury-containing equipment from Blount.**
- **Laid groundwork to install and test particulate matter control technologies at two diesel generator sites.**

We also continue to advance evaluation of strategies and technologies for further emission reductions at Blount.

**Section 2** of this report includes an environmental assessment by an independent auditing firm. This assessment measured our compliance with the ECA commitments and our conformance with federal, state, and local environmental requirements.

The audit firm found MGE to be in full compliance with our ECA commitments. Improvements to MGE's environmental recordkeeping resulting from the ECA have allowed auditors to examine MGE's records in greater detail. Third-party audits are not typically made public. We are seeking to create a level of audit transparency that goes beyond standard practice and helps us improve. The Table of Findings with Corrective Actions and Status in Section 2 outlines actions MGE has taken to correct any of the exceptions found during the audit.

## 2005 MGE Power Sources

Blount continues to make an important contribution to the reliability of MGE's electric system. Blount's location in downtown Madison makes it especially significant for reliability in the central city area. During 2005, Blount provided 12.60% of the electricity for MGE customers.

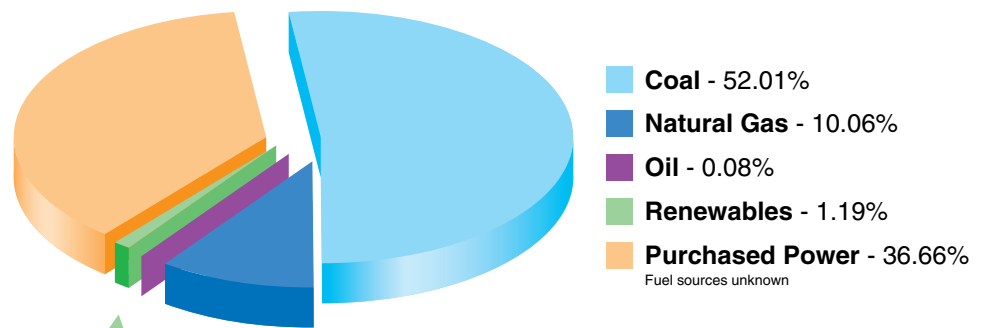
### Where MGE electricity comes from



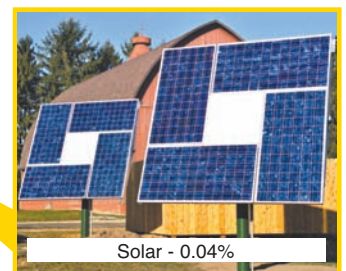
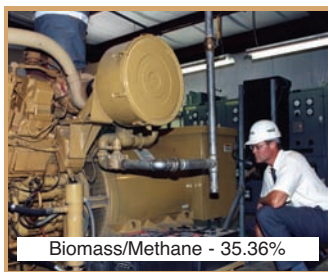
## 2005 MGE Fuels

Many energy sources provide the fuel necessary to generate electricity at MGE. The amount of electricity generated from natural gas more than doubled since last year. This increase can be attributed to the installation of West Campus Cogeneration Facility (WCCF).

### Fuels used to generate electricity



### Renewables Mix



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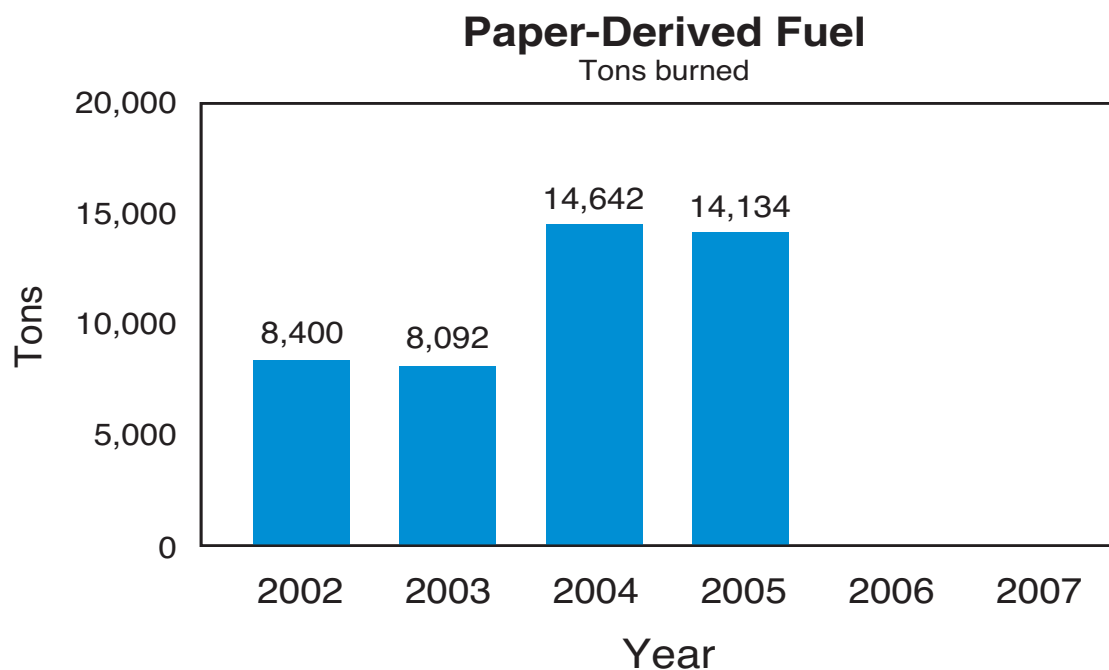
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## **SECTION 1**

### **ENVIRONMENTAL COOPERATIVE AGREEMENT (ECA) 2005 PERFORMANCE DATA**

## Alternate Fuel Usage

We continued to use pre-consumer paper, plastics, and cardboard waste material (PDF) as fuel in 2005. We burned 14,134 tons of PDF, equivalent to about three weeks of coal use. In spring 2006, we are scheduled to implement the Boiler 8 Combustion Improvement Project. The project is based on the findings of a 2003 study required under the ECA. The project is expected to help improve the combustion efficiency of PDF which may reduce emissions of carbon monoxide (CO), particulate matter, nitrogen oxides (NO<sub>x</sub>), and volatile organic compounds (VOCs). Increased combustion efficiency will allow us to burn more PDF at Blount and less coal. As a result of this project, we expect to increase our emission reductions even further in 2006.



**Tons of PDF  
Burned in 2005**

**14,134**

**=**

**Tons of Coal  
Displaced**

**14,374**

**=**

**Avoided Emissions  
(Reductions)\***

**SO<sub>2</sub> - 328 Tons**

**NO<sub>x</sub> - 11 Tons**

**Mercury - 0.7 lbs.**

**Particulate Matter - 12 Tons**

**CO<sub>2</sub> - 8,422 Tons**

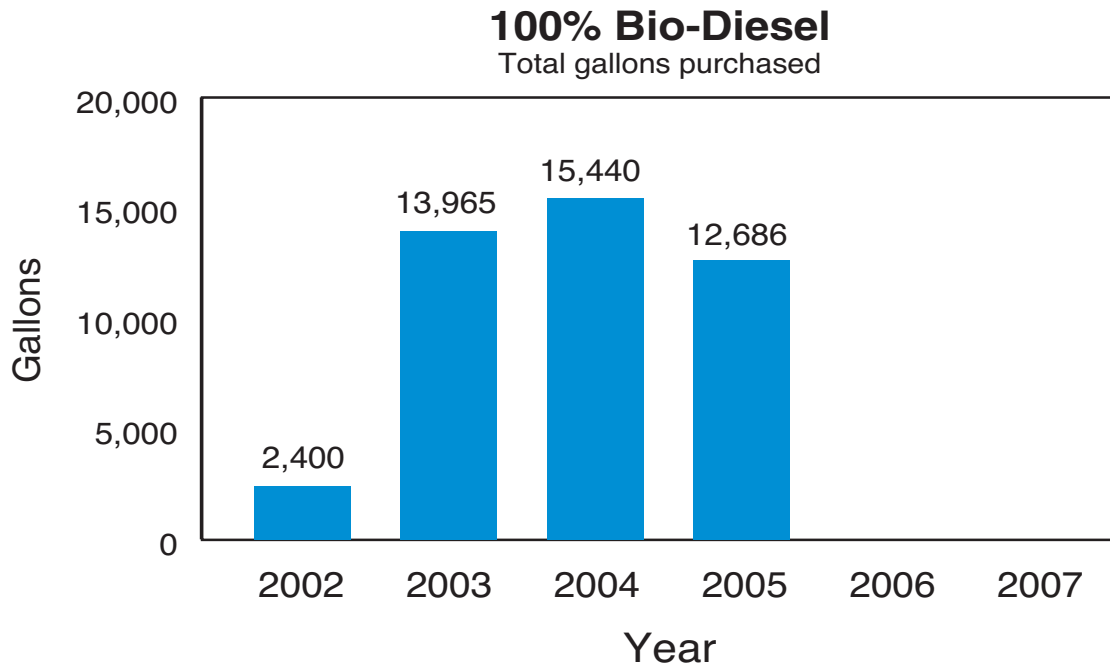
**\*Note:**

Emission reductions are estimated as follows:

Emissions associated with the displaced coal (14,374 tons) minus the emissions associated with the PDF (14,134 tons) equals reductions.

## Bio-Diesel Fuel

After the ECA signing in October 2002, MGE began using bio-diesel fuel in those fleet vehicles and off-road equipment that refuel at our downtown Central Service Station. The amount of bio-diesel purchased declined by 18% in 2005. This can be attributed to fewer small diesel trucks in MGE's fleet. The number of small diesel trucks declined from 88 in 2004 to 79 in 2005.



Based on Environmental Protection Agency (EPA) data, replacing petroleum-based diesel fuel reduces CO emissions by 10%, particulate matter by 15%, sulfates by 20%, and hydrocarbons by 20%. Bio-diesel may also cause a slight increase in NO<sub>x</sub> emissions. (See EPA fact sheet in the Appendix for more details.)

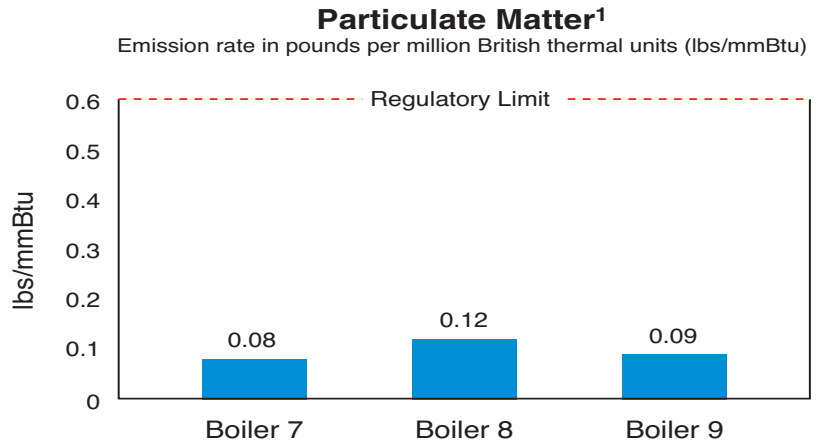
Bio-diesel is a fuel produced from a variety of renewable resources, including waste vegetable oils, cooking oil, soybean oil, and animal fats. Bio-diesel can replace petroleum diesel and produces significantly less air pollution. It is renewable and biodegradable.



## Regulated Emissions

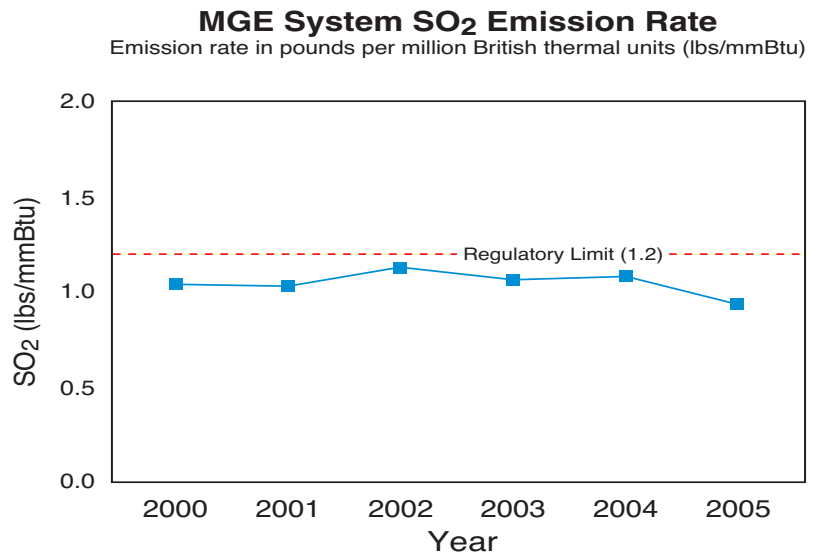
MGE consistently achieves air emissions below regulatory requirements, and in several cases, well below. The following charts provide emissions data for 2005.

The air permit for Blount limits particulate matter emissions to 0.6 pounds per million British thermal units (Btu).<sup>\*</sup> The chart shows all three boilers are well below the regulatory standard ranging from approximately 5 to 10 times lower than the limit.



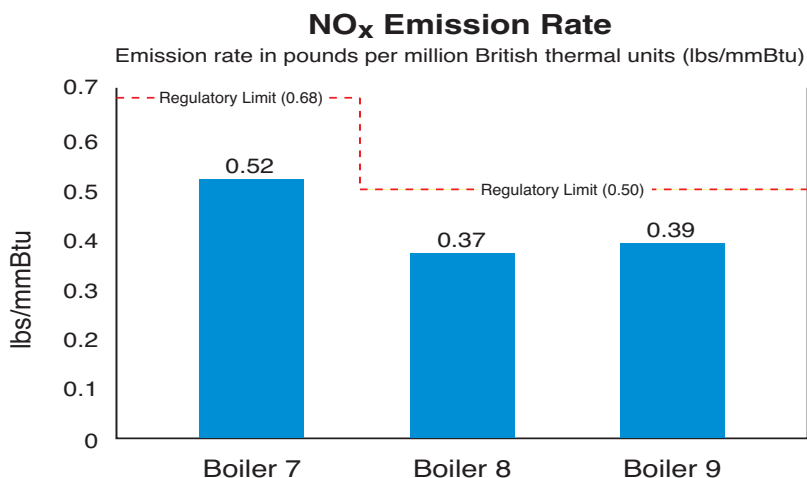
<sup>1</sup>The particulate matter data represents total particulate matter.

The Wisconsin Acid Rain Law sets an annual average sulfur dioxide (SO<sub>2</sub>) emission rate of 1.2 pounds per million Btu for all MGE boilers. Our emission rate is based on Continuous Emissions Monitoring System (CEMS) data collected at Blount, Columbia Generating Station, and WCCF. The CEMS consists of equipment and computers that track how much SO<sub>2</sub> and NO<sub>x</sub> the plants are releasing.

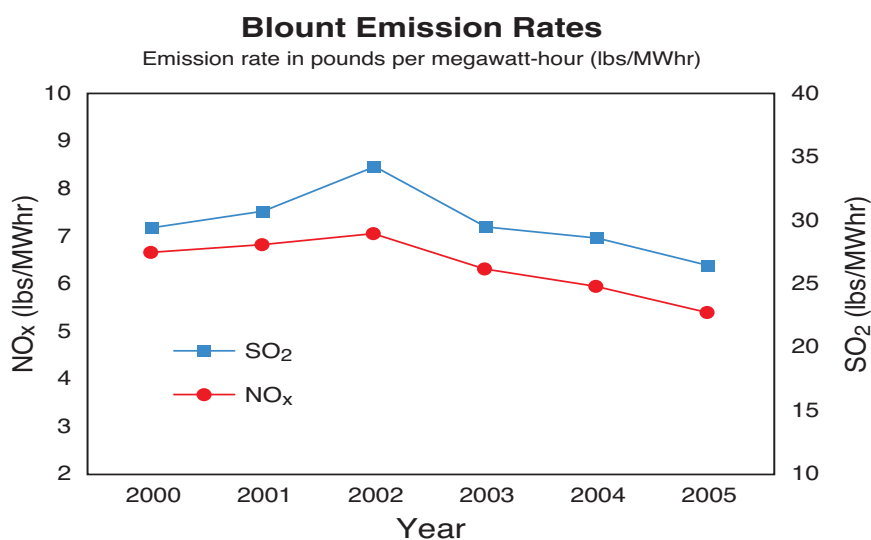


<sup>\*</sup>A Btu is a measure of the heating value of the fuel being burned. Burning 91 pounds of coal generates one million Btu of heat.

The Environmental Protection Agency (EPA) Acid Rain Program for Blount limits NO<sub>x</sub> emissions from each boiler. The EPA set different limits for different types of boilers. Boiler 7 has an annual NO<sub>x</sub> limit of 0.68 pounds per million Btu. Boilers 8 and 9 have a NO<sub>x</sub> limit of 0.50 pounds per million Btu. The NO<sub>x</sub> emission rate is based on CEMS data collected at Blount.



Emission rates at Blount have declined over the last six years. The chart shows NO<sub>x</sub> and SO<sub>2</sub> emission rates dropped 20% and 10%, respectively, since 2000.



## **Environmental Management System**

Under the ECA, MGE committed to implementing an Environmental Management System (EMS) at Blount based on ISO or an equivalent standard. MGE achieved certification of our EMS to the ISO 14001 standard on September 23, 2004 (copy of ISO certification in Appendix). In 2005, we focused attention on meeting requirements to maintain this certification, including:

- Conducting quarterly internal audits. These are partial audits of the EMS conducted by our Internal Audit Department, a group that reports directly to the Company's CEO and Board of Directors.
- Conducting refresher training for all Blount employees.
- Conducting two external surveillance audits. These are partial audits of the EMS performed by a third-party auditor certified to the ISO standard.
- Reviewing current and future environmental goals.

In 2006, MGE will work on adapting our EMS to meet the latest version of the 14001 standard, ISO 14001:2004. Although we met the minimum requirements for the new standard, our current EMS is written to conform to the 1996 standard. This work will be completed prior to the next external surveillance audit scheduled for April 2006.

## **Boiler 8 Combustion Improvement Study**

The Boiler 8 Combustion Improvement Study, completed in November 2003, recommended several projects be undertaken to improve the combustion efficiency on Boiler 8. Although MGE planned to implement the study's recommendations in November 2005, the project was postponed due to the late arrival of equipment and in response to an increase in the cost of replacement energy. A special outage for this project has been rescheduled to start in spring 2006. The project is expected to increase the use of alternative fuels and potentially reduce NO<sub>x</sub>, particulate matter, opacity levels, CO, and VOCs.

## **WDNR Voluntary Emission Reduction Registry**

MGE is developing the supporting documentation and calculations required for the registry application for emission reductions made in 2004 and 2005. MGE is also considering using emission reductions from PDF to meet voluntary emission offset commitments for WCCF instead of including these reductions in the WDNR's registry.

## **Stormwater Demonstration Project**

MGE installed a stormwater filtration system in October 2003 to treat runoff from parking lots at 623 and 702 East Main Street. Stormwater monitoring equipment has been in place since summer 2005. This equipment will be used by MGE and the U.S. Geological Survey (USGS) to evaluate and monitor the effectiveness of the filtration system to control pollutants including sediment, nutrients, and heavy metals. Results from storm events have been recorded on a daily basis, as they occur, since installation last summer. Unfortunately, there were so few measurable storms during 2005 that the results are not indicative of a typical storm season.

During the last quarter of 2005, new equipment was being bench tested at USGS to enhance our data gathering capabilities. In order to improve the system, MGE plans to install a closed-circuit television next year that will automatically run and record images as storm events occur. Once this new monitoring and measurement equipment is installed, video images will be available for USGS staff to view remotely.

## **Noise Procedure**

Under the noise control procedure outlined in the ECA Baseline Report, all calls regarding noise concerns are routed to a Blount contact person for resolution. Blount received no noise complaints in 2005.

## **Mercury Thermostat Recycling for Building Contractors**

The ECA requires MGE to continue its voluntary mercury thermostat recycling program and allow select noncustomers (e.g., building contractors) as well as customers to drop off mercury-containing thermostats and other devices for recycling.

Approximately 75 thermostats containing one-half pound of mercury were recycled in 2005.

## **Beneficial Ash Use Report**

Since June 1, 2004, MGE has been sending fly ash from Blount for use as structural fill in an Iowa limestone mine. Approximately 21,000 tons of ash was diverted from landfill in 2005.

At the end of 2005, we began reevaluating beneficial reuse options for approximately 600 tons per year of bottom ash. Blount bottom ash tests out as a Category 3 byproduct under Chapter NR 538, Wisconsin Administrative Code, Rules for Beneficial Use of Industrial Byproducts. A number of beneficial uses are available for Category 3 byproducts, but the primary use is a subbase material under roadways, parking lots, or commercial and industrial areas. Per the WDNR regulation, the bottom ash must be stored in an approved storage area. Although it would be cost-prohibitive on a per-ton basis for MGE to construct its own facility to store the limited volume of ash from Blount, we are negotiating with Alliant Energy to use the storage area at Columbia.

## **Mercury Inventory and Removal Plan**

In 2005, Safety and Environmental Affairs focused attention on accurately quantifying mercury removed from mercury-containing equipment at Blount and other MGE departments so data shared with the public or collected for the DNR's Voluntary Emission Reduction Registry would be as accurate as possible. Historically, we have tracked the weight of the mercury-containing equipment to meet the hazardous waste regulations.

In 2005, Blount developed a schedule for replacing mercury-containing items and equipment. The replacement schedule is based on planned maintenance and capital project schedules for the facility. Plans are to remove and recycle mercury during outages for Boilers 7 and 8 in 2006.

## **Diesel Generator Emission Reductions**

MGE intends to evaluate two particulate matter control technologies for diesel generators. The technologies include an Environmental Solutions Worldwide (ESW) Particulate Reactor and a Continuously Regenerating Technology (CRT) Particulate Filter. The ESW Particulate Reactor consists of a catalyst that is expected to reduce particulate matter emissions by more than 50% and VOCs by 60%. The CRT particulate filter combines a catalyst and filter system that is expected to reduce particulate matter by 85% and VOCs by 90%.

In summer 2006, MGE intends to perform tests to challenge the control equipment with worst-case ambient temperatures. The two generators that will be subject to testing are located at the Madison Water Utility, Unit No. 16, 6706 Mineral Point Road, and at Madison Water Utility, Unit No. 27, 18 North Randall Avenue.

## **Thermal Discharge Study**

The ECA requires MGE to conduct a study on the feasibility of recovering heat from non-contact cooling water for local use and to reduce thermal discharge to Lake Monona. MGE hired Power Engineers Collaborative to work on the thermal study, but the study has been postponed until the WDNR's thermal discharge rules are released. The study will be completed before the ECA agreement expires in September 2007.

## **Cogeneration Study**

The ECA requires MGE to study the feasibility of cogeneration at Blount. The initial review occurred as part of the comprehensive analysis conducted to develop MGE's Energy 2015 Plan. Both coal and natural gas cogeneration options were analyzed. Neither fuel source was cost-effective in cogeneration in the analysis. Subsequent to the Energy 2015 announcement, more detailed analysis of several alternatives was initiated. MGE staff expects to complete this analysis and study report before the ECA expires in September 2007.

## **Beyond ECA - Renewable Energy Projects**

**Solar** - MGE continued monitoring and maintaining 17 solar photovoltaic installations in our area that feature different equipment in different configurations from different manufacturers. Together, these systems produced about 58,000 kilowatt-hours. We found that 2005 was a more normal solar year and saw our outputs increase from lower levels in 2004 when it was less sunny. However, a cold snap and snowy conditions kept arrays covered and decreased energy production for an extended period during December 2005.

**Wind** - In 2005, MGE's Kewaunee wind farm produced 18,766 megawatt-hours of wind energy, or enough to power about 2,600 average residential customers for the year. In our Energy 2015 Plan, MGE announced its intent to increase its wind resources by 5 to 10 times over the next ten years.

**Methane** - The Metropolitan Refuse District Landfill in Middleton is now the home of a Stirling engine matched to a 55-kilowatt (kW) generator to generate electricity from landfill gas. The unique application may pave the way for other landfills to productively use the methane that is often just burned off. The unit was successfully started on January 24, 2006. MGE is the first company in North America to use a Stirling engine to burn landfill gas to create electricity.

**Hydrogen** - Working with Virent Energy Systems in Madison, Wisconsin, we installed a natural gas/hydrogen-fueled generator. The generator is initially started on MGE natural gas and the heat of the engine is supplied to Virent's Aqueous Phase Reformer (APR). The APR takes sugar-based liquids and converts them into a blend of hydrogen and other gases that Virent calls Supernatural gas. Once the APR is producing sufficient amounts of Supernatural gas, the engine is switched from natural gas to Supernatural gas. The system delivers 10 kW of power into the MGE power grid. It will be the first sugar-to-electricity system in the world using this process.

## **SECTION 2**

### **COMPLIANCE AUDIT RESULTS AND CORRECTIVE ACTION**

## **Introduction**

As part of the ECA process, an independent auditing firm, Environmental Compliance & Engineering, Inc. (ECE), evaluated Blount to determine its conformance with federal, state, and local environmental requirements as well as the ECA. The audit was performed by three environmental professionals between November 7 to November 11, 2005. The audit involved a physical survey of operations, an extensive examination of relevant records, and interviews of key MGE personnel. ECE has extensive experience in performing environmental audits on industrial operations throughout North America. ECE's Statement of Qualifications (SOQ) is included in the Appendix.

ECE's audit results are included in the first part of this section. Although third-party audits are not typically made public, MGE is seeking to create a level of audit transparency that goes beyond standard practice and helps us improve.

The audit report shows MGE is in full compliance with the ECA in all respects, and most of MGE's conformance exceptions involved record keeping and reporting. None of the audit findings involve unauthorized releases or a threat to public health, safety, or the environment.

The ECE audit identified areas for continued improvement. We recognize that the appropriate response to these discoveries requires both swift action to immediately correct any problems and long-term solutions that prevent future nonconformance. The immediate corrective action taken on each finding is explained in the Corrective Action table located in the second half of this section.



# **Environmental Audit Report**

**Prepared by  
Environmental Compliance & Engineering, Inc.**

Environmental Audit Report  
Madison Gas & Electric  
Blount Street Station  
Madison, Wisconsin

December 2005

*Prepared for  
Madison Gas & Electric  
Madison, Wisconsin*

*Prepared by  
Environmental Compliance & Engineering, Inc.  
181 Trails End  
Aurora, Ohio 44202*

## **Introduction**

This report summarizes the results of an environmental audit of the Madison Gas & Electric (MGE) Blount Street Station (Facility) located in Madison (Dane County), Wisconsin. The objective of this audit was to evaluate the conformance status of representative Facility operations with respect to Federal, State of Wisconsin, Dane County and City of Madison statutes, ordinances and the Wisconsin Department of Natural Resources (WDNR)/MGE Environmental Cooperative Agreement (ECA). The objective of the attached report is to communicate the audit results. This report is not meant to imply legal certification of compliance or non-compliance.

The scope of this audit was generally directed toward Facility operations related to air quality (asbestos, CFCs, construction/operating permits, NSPS, NESHAPs, PSD), emergency planning (EPCRA/CERCLA reporting, SPCC/OPA/FRP, hazardous waste contingency plans, RMP), regulated materials (PCBs, pesticides, radiation, TSCA), underground/aboveground storage tanks, waste management (hazardous, non-hazardous, medical, universal, used oil), and water quality (groundwater, WPDES, storm water, underground injection, process wastewater, wells, drinking water). The period of review for this audit was from December 11, 2004 – November 11, 2005. The onsite portion of the audit took place from November 7, 2005 – November 11, 2005.

The audit was based on a physical survey of the facility and examination of a sample of environmental, administrative and/or operating records and interviews with key personnel.

This report includes all non-conformance findings identified during the audit, regardless of the significance of the issue. Findings are categorized as “exceptions”, which are confirmed instances of non-conformance, or “observations”, which are instances where non-conformance is suspected but unconfirmed, or where there is an elevated risk of non-conformance if action is not taken. All findings in this report are exceptions, unless specifically identified as an observation.

## Executive Summary

Facility operations reviewed were noted to be in substantive conformance with Federal, State of Wisconsin, Dane County and City of Madison statutes or regulations, except as provided in the findings tables of this report. The findings of non-conformance relate to recordkeeping and reporting matters. ECE found no evidence of any substantive exceedances of permit or regulatory limitations which would have posed a threat to public health or the environment. The findings are summarized as follows:

Program Area	Exceptions	Observations
Air Quality	4	3
Emergency Planning	2	3
Regulated Material	0	0
USTs/ASTs	1	0
Waste Management	1	1
Water Quality	0	0

Additionally, the facility was in conformance with conditions of the Environmental Cooperative Agreement (ECA).

Based on ECE's experience, MGE personnel have a thorough working knowledge of applicable regulatory requirements and consider environmental compliance to be a priority. MGE personnel demonstrated a thorough understanding of the applicable environmental regulatory programs.

The following tables present the full text of the environmental non-conformance findings that were identified during the audit. Included are the regulatory citations for those findings driven by regulatory requirements. The non-conformance issues are principally associated with recordkeeping and reporting issues.

Topic	Conformance Exception	Recommendation
Air – Title V	The Annual Compliance Certification report dated Jan 28, 2005 does not list the alternative operating scenario for the combustion of paper-derived fuel, as required in Part C of the report forms. The combustion of paper-derived fuel is listed as an alternative operating scenario for two of the coal-fired boilers. [Title V Permit, Part II, Section N (1) (b) (1)]	The facility should identify each alternative operating scenario, the emission unit that is operated under that scenario along with the beginning and end dates during which the source operated under that scenario. The facility should contact MGE legal council to determine if the Annual Compliance Certification should be revised and resubmitted.
Air – Title V	The form used to record data while burning paper-derived waste fuel does not include “the average percentage of heat input supplied to the boiler from coal and/or natural gas”. The data needed to make this calculation was recorded and available to inspectors, however the results of calculating the average had not been recorded. (Title V Permit, Condition G.1.c.2.e.)	The form was amended during the audit. No further corrective action is required.
Air – Title V	The forms used to record “Boiler Operating Data and Precipitator Checks” (which include ESP parameter values) were recorded with incorrect dates (i.e. “2006”) from October 24 (approximate) to November 9, 2005. (Title V Permit, Condition C. 1. b. 3)	The form was amended during the audit. No further corrective action is required.
Air – Title V	The “Emergency Generator Operating Hours, 12 Consecutive Months” form for the time period July 2004 - June 2005 had a June 15, 2005 completion date. The data from July 2004 – June 2005 used to prepare the form was available, however the form should not have been completed prior to June 30, 2005. (Title V Permit, Condition J. 3. b. 1.)	The facility should investigate the cause of the inaccurate completion date and amend the form as necessary or generate a new record.

Topic	Conformance Exception	Recommendation
SPCC	<p>The following items associated with the SPCC plan were identified:</p> <ul style="list-style-type: none"> <li>• The following oil storage areas were either not included or were not accurate: <ul style="list-style-type: none"> <li>➤ 6-B-6, #6 Boiler FD fan hydraulic coupling reservoir,</li> <li>➤ 9-B-0, 2 x 55 gallon drums of coal/tar sludge water,</li> <li>➤ 7-T-0, 4 x 55 gallon drums of used oil compared to 2 in the plan,</li> <li>➤ 6-T-1, 15 x 55 gallon used oil drums compared to 11 in the plan. [40 CFR 112.7 (a)(3)]</li> </ul> </li> <li>• The facility diagram does not include the fuel oil piping connecting the loading/unloading station and the tank or the piping from the tank to the process. [40 CFR 112.7 (a)(3)]</li> <li>• The “Certification of the Applicability of Substantial Harm Criteria” form filed with the plan is not signed by an authorized representative and is not the correct form as identified in 40 CFR 112 Appendix C.</li> <li>• A Professional Engineer has not recertified the plan when changes to the facility were made which materially affect its potential for a discharge. The plan was last certified in April 2003 and changes, such as replacement of the underground fuel oil piping and additions to the oil storage areas, require the plan to be certified. [40 CFR 112.5 (a) and (c)]</li> </ul>	<p>ECE understands that MGE has retained a consultant to make the following revisions to the SPCC plan:</p> <ul style="list-style-type: none"> <li>• Add and amend the oil storage areas as identified,</li> <li>• Replace or amend the existing facility diagram to include the fuel oil piping layout,</li> <li>• A signed “Certification of the Applicability of Substantial Harm Criteria” form was retrieved from the facility files and placed with the SPCC plan during the audit. No further corrective action required,</li> <li>• Once all of the updates and changes have been made, submit the plan to a Professional Engineer for review and certification.</li> </ul>

Topic	Conformance Exception	Recommendation
SPCC	<p>The following discrepancies associated with implementation of the SPCC Plan were identified:</p> <ul style="list-style-type: none"> <li>• The concrete wall providing secondary containment for the 500,000-gallon fuel oil tank is not impervious due to the gap between the wall and the PVC rainwater discharge pipe that exits through the wall approximately 18 inches above the ground level. [40 CFR 112.7(a)(5)(c)]</li> <li>• The bottom valve on the fuel oil tank was not locked according to the plan “when in a non-operating mode”. (SPCC-BS-300 – Page 7)</li> </ul>	<p>The facility should seal the area between the discharge pipe and the secondary containment wall.</p> <p>The facility should lock the drain valve when it is not in service.</p>
Tanks	<p>Aboveground Storage Tank (AST) registrations for the 615-gallon sulfuric acid and the 805-gallon caustic soda tank located in the demineralizer area (1-B-1) were not available in the facility files. Any ASTs greater than 110 gallons that contain a flammable or combustible liquid or contains a chemical that is listed on the CERCLA list of hazardous substances is included in the registration process. Additionally, termination records were not available for the sulfuric acid and caustic soda tanks located in the coal yard that have been decommissioned.</p>	<p>The facility should locate or prepare AST registration applications for each AST and submit them to the Wisconsin Department of Commerce. If the former sulfuric acid and caustic soda tanks located in the coal yard were previously registered, a notice of termination should be located or submitted.</p>
Waste – Used Oil	<p>Two drums used to collect used oil were labeled “waste oil” instead of “used oil”.</p>	<p>The drums were labeled “Used Oil” during the audit. No further corrective action required.</p>

Topic	Good Management Practice Observations	Recommendation
Air- CFC	The facility inventory of freon-containing equipment indicates that appliance RTU-HVAC 001 contains 90 pounds of R22. The unit has two circuits containing 45 pounds each and should be managed as two separate 45-pound units.	The facility revised the inventory that identifies the unit as RTU-HVAC 001A and RTU-HVAC 001B during the audit. No further corrective action required.
Air – Title V	The forms used to track electrostatic precipitator (ESP) parameters do not clearly identify “Secondary Voltage” and “Secondary Current” as indicated and described in permit condition C.1.b.3.b and d, which may result in confusion. The information was available, but was not clearly stated on the form. Also, none of the records are labeled as being “Amps”.	The facility should amend the form to clearly identify entries intended to represent “The Secondary Voltage, in Volts”, and “The Secondary Current, in Amps”.
Air – CEMS, QA/QC	The Continuous Emission Monitoring System (CEMS) QA/QC plan does not include a monitoring plan in Appendix A as indicated in the text of the plan. (40 CFR Part 75, Appendix B.1 )	The monitoring plan is included in the body of the CEMS QA/QC plan. The facility should remove all reference to Appendix A in the text of the plan.
TRI	During the audit, it was not obvious that all emission sources from facilities that are owned by MGE and are contiguous to the Blount Street Station operation were considered when preparing the TRI emission calculations.	The facility should review the operations that are contiguous to the Blount Street Station operation to verify that there are no offsite shipments or emissions of reportable 313 chemicals to the air or water. Contiguous operation emissions should be documented.
TRI	The “composition of ingredients” section of the Material Safety Data Sheet (MSDS) for Ultra Low Sulfur Diesel Fuel indicates a trimethylbenzene concentration range of 0.5 – 2.0% by weight. However, the “regulatory information” section of the MSDS indicates that the weight percent for SARA 313 purposes is 2.0%. The facility used the midpoint range in their usage threshold calculations.	The facility should contact the Ultra Low Sulfur Diesel Fuel supplier and obtain more specific data regarding the presence and concentration of the 313 chemical components found in the fuel.



Topic	Good Management Practice Observations	Recommendation
TRI	<p>The following deficiencies associated with the 2004 Form R reports for each reportable chemical were identified:</p> <ul style="list-style-type: none"> <li>• Section 5.5.4, onsite disposal “other disposal”, the facility reported 0 pounds released instead of NA,</li> <li>• Section 8.8, quantity released as a result of a remedial action, the facility reported 0 pounds released instead of NA,</li> <li>• There were multiple situations where emissions were reported to a level of detail where the emissions calculation data does not support such detail. (Ex. 18,068.3 lbs of barium was reported to an offsite landfill). The TRI instruction booklet suggests that emissions of non-PBT chemicals that are greater than 1,000 pounds “need not be reported to more than 2 significant digits. This estimate should be in whole numbers. Do not use decimal points.”</li> </ul>	<p>The facility should review its TRI documentation and Form R reports and revise the Form R reports as necessary for reporting year 2005.</p>
Waste – Solid	<p>Three 55-gallon drums labeled “waste lime” were observed on the second floor near the water softener tank. The drums were labeled with a green non-hazardous waste label and were dated February 1997.</p>	<p>Subsequent to the onsite portion of the audit, the facility determined that the content of each of the three drums was a solid white powder. The material has been characterized as a non-hazardous waste. The facility is in the process of arranging for proper disposal or reuse of the material.</p>

**Table of Findings with  
Corrective Action and Status**

Topic	Conformance Exception	Corrective Action	Status
Air – Title V	The Annual Compliance Certification report dated Jan 28, 2005 does not list the alternative operating scenario for the combustion of paper-derived fuel, as required in Part C of the report forms. The combustion of paper-derived fuel is listed as an alternative operating scenario for two of the coal-fired boilers. [Title V Permit, Part II, Section N (1) (b) (1)]	MGE submitted a letter for the 2004 and 2005 Annual Compliance Certification reports to clarify that the permit does not require MGE to report the beginning and end dates for PDF usage. Similar language will also be added to all future annual compliance certification reports.	Completed January 18, 2006.
Air – Title V	The form used to record data while burning paper-derived waste fuel does not include “the average percentage of heat input supplied to the boiler from coal and/or natural gas”. The data needed to make this calculation was recorded and available to inspectors, however the results of calculating the average had not been recorded. (Title V Permit, Condition G.1.c.2.e.)	The form was amended during the audit to reflect the average percentage of heat input supplied to the boiler from coal and/or natural gas.	Completed November 11, 2005.
Air – Title V	The forms used to record “Boiler Operating Data and Precipitator Checks” (which include ESP parameter values) were recorded with incorrect dates (i.e. “2006”) from October 24 (approximate) to November 9, 2005. (Title V Permit, Condition C. 1. b. 3)	The forms were amended during the audit to reflect the correct year. All forms will be checked by Supervisor - Fuel and Environmental Compliance to confirm the correct date stamp is being used.	Completed November 11, 2005.
Air – Title V	The “Emergency Generator Operating Hours, 12 Consecutive Months” form for the time period July 2004 - June 2005 had a June 15, 2005 completion date. The data from July 2004 – June 2005 used to prepare the form was available, however the form should not have been completed prior to June 30, 2005. (Title V Permit, Condition J. 3. b. 1.)	The form was amended during the audit to reflect the correct date.	Completed November 11, 2005.

Topic	Conformance Exception	Corrective Action	Status
SPCC	<p>The following items associated with the SPCC plan were identified:</p> <ul style="list-style-type: none"> <li>• The following oil storage areas were either not included or were not accurate: <ul style="list-style-type: none"> <li>➤ 6-B-6, #6 Boiler FD fan hydraulic coupling reservoir,</li> <li>➤ 9-B-0, 2 x 55 gallon drums of coal/tar sludge water,</li> <li>➤ 7-T-0, 4 x 55 gallon drums of used oil compared to 2 in the plan,</li> <li>➤ 6-T-1, 15 x 55 gallon used oil drums compared to 11 in the plan. [40 CFR 112.7 (a)(3)]</li> </ul> </li> <li>• The facility diagram does not include the fuel oil piping connecting the loading/unloading station and the tank or the piping from the tank to the process. [40 CFR 112.7 (a)(3)]</li> <li>• The “Certification of the Applicability of Substantial Harm Criteria” form filed with the plan is not signed by an authorized representative and is not the correct form as identified in 40 CFR 112 Appendix C.</li> <li>• A Professional Engineer has not recertified the plan when changes to the facility were made which materially affect its potential for a discharge. The plan was last certified in April 2003 and changes, such as replacement of the underground fuel oil piping and additions to the oil storage areas, require the plan to be certified. [40 CFR 112.5 (a) and (c)]</li> </ul>	The SPCC Plan was amended to address the findings.	Completed March 1, 2006.

Topic	Conformance Exception	Corrective Action	Status
SPCC	<p>The following discrepancies associated with implementation of the SPCC Plan were identified:</p> <ul style="list-style-type: none"> <li>The concrete wall providing secondary containment for the 500,000-gallon fuel oil tank is not impervious due to the gap between the wall and the PVC rainwater discharge pipe that exits through the wall approximately 18 inches above the ground level. [40 CFR 112.7(a)(5)(c)]</li> <li>The bottom valve on the fuel oil tank was not locked according to the plan “when in a non-operating mode”. (SPCC-BS-300 – Page 7)</li> </ul>	<p>The facility sealed the area between the discharge pipe and the secondary containment wall.</p> <p>Retrain staff on SPCC requirement to lock the drain valve when it is not in service.</p>	<p>Completed November 29, 2005.</p> <p>Training was completed by December 31, 2005.</p>
Tanks	<p>Aboveground Storage Tank (AST) registrations for the 615-gallon sulfuric acid and the 805-gallon caustic soda tank located in the demineralizer area (1-B-1) were not available in the facility files. Any ASTs greater than 110 gallons that contain a flammable or combustible liquid or contains a chemical that is listed on the CERCLA list of hazardous substances is included in the registration process. Additionally, termination records were not available for the sulfuric acid and caustic soda tanks located in the coal yard that have been decommissioned.</p>	<p>Submit tank registration applications for new acid and caustic tanks and a notice of termination for the old tanks.</p>	<p>Completed March 1, 2006.</p>
Waste – Used Oil	<p>Two drums used to collect used oil were labeled “waste oil” instead of “used oil”.</p>	<p>Changed labels during the audit. Checked entire plant to confirm that all drums are properly labeled.</p>	<p>Completed December 10, 2005.</p>

Topic	Good Management Practice Observations	Corrective Action	Status
Air- CFC	The facility inventory of freon-containing equipment indicates that appliance RTU-HVAC 001 contains 90 pounds of R22. The unit has two circuits containing 45 pounds each and should be managed as two separate 45-pound units.	Changed facility inventory to show the HVAC should be managed as two separate units.	Completed November 11, 2005.
Air – Title V	The forms used to track electrostatic precipitator (ESP) parameters do not clearly identify “Secondary Voltage” and “Secondary Current” as indicated and described in permit condition C.1.b.3.b and d, which may result in confusion. The information was available, but was not clearly stated on the form. Also, none of the records are labeled as being “Amps”.	The forms were amended to clearly identify secondary voltage and secondary current.	Completed January 1, 2006.
Air – CEMS, QA/QC	The Continuous Emission Monitoring System (CEMS) QA/QC plan does not include a monitoring plan in Appendix A as indicated in the text of the plan. (40 CFR Part 75, Appendix B.1 )	The QA/QC Plan was amended.	Completed December 5, 2005.
TRI	During the audit, it was not obvious that all emission sources from facilities that are owned by MGE and are contiguous to the Blount Street Station operation were considered when preparing the TRI emission calculations.	Document all insignificant emissions from operations contiguous to Blount.	Completed November 21, 2005.
TRI	The “composition of ingredients” section of the Material Safety Data Sheet (MSDS) for Ultra Low Sulfur Diesel Fuel indicates a trimethylbenzene concentration range of 0.5 – 2.0% by weight. However, the “regulatory information” section of the MSDS indicates that the weight percent for SARA 313 purposes is 2.0%. The facility used the midpoint range in their usage threshold calculations.	MGE contacted the fuel oil supplier to find out what trimethylbenzene concentration should be used for purposes of TRI reporting.	Completed February 10, 2006.

Topic	Good Management Practice Observations	Corrective Action	Status
TRI	<p>The following deficiencies associated with the 2004 Form R reports for each reportable chemical were identified:</p> <ul style="list-style-type: none"> <li>• Section 5.5.4, onsite disposal “other disposal”, the facility reported 0 pounds released instead of NA,</li> <li>• Section 8.8, quantity released as a result of a remedial action, the facility reported 0 pounds released instead of NA,</li> <li>• There were multiple situations where emissions were reported to a level of detail where the emissions calculation data does not support such detail. (Ex. 18,068.3 lbs of barium was reported to an offsite landfill). The TRI instruction booklet suggests that emissions of non-PBT chemicals that are greater than 1,000 pounds “need not be reported to more than 2 significant digits. This estimate should be in whole numbers. Do not use decimal points.”</li> </ul>	MGE reviewed its TRI documentation and Form R reports to determine if any changes are necessary for 2006 submittals.	Completed February 24, 2006.
Waste – Solid	Three 55-gallon drums labeled “waste lime” were observed on the second floor near the water softener tank. The drums were labeled with a green non-hazardous waste label and were dated February 1997.	The facility disposed of the waste lime.	Completed December 22, 2005.

## APPENDIX



## **EPA FACT SHEET**



The Deer Valley School District in Phoenix, Arizona, began using biodiesel in 1999 following a state mandate that school districts use alternative fuel vehicles to curb air pollution. In a total fleet of 250 vehicles, 140 school buses and 5 maintenance trucks run on biodiesel. These vehicles will travel 2.5 million miles annually in Deer Valley.

The buses use a B20 blend of biodiesel mixed on site by school district staff; the other vehicles run on B100. Vehicles run on both reused oil and virgin biodiesel, depending on suppliers and availability, with no apparent differences in performance. While the school district spends more money on fuel, its alternative fuels program receives state grant money. The district also encourages surrounding school districts to use biodiesel so they can order bulk quantities at a reduced price.

A blind pilot study in Deer Valley revealed that school bus drivers noticed performance increases with biodiesel. They were baffled, however, by what they perceived as the smell of hot dogs throughout the day—apparently from biodiesel made from used cooking grease.

For more information, call Bill Kohn at (602) 467-5072.

# Clean Alternative Fuels: Biodiesel

One in a series of fact sheets

In 1895, Dr. Rudolf Diesel developed the “diesel” engine with the intention of running it on a variety of fuels, including vegetable oil. In fact, when Diesel demonstrated his engine at the World Exhibition in Paris in 1900, he used peanut oil as fuel. Since that time, however, the diesel engine has been modified to run on petroleum-derived fuel (petrodiesel) because historically it was the least expensive fuel available.

Today, the diesel engine is still capable of running on “biodiesel” fuel, which can be produced from a variety of renewable sources, including soybean oil, canola oil, sunflower oil, cottonseed oil, and animal fats. These sources can be obtained from agricultural feedstocks or by recycling used oil such as cooking grease. Most biodiesel produced in the United States is made from soybean oil due to this feedstock’s abundance.

Biodiesel is usable in its pure form, known as “neat biodiesel” or B100. In addition, it is available in various blends with petrodiesel, the most common of which is known as B20 (20 percent biodiesel and 80 percent petrodiesel). It is also used in smaller percentages as a lubricating fuel additive.

## AVAILABILITY

The biodiesel industry is continually expanding. In 1996, only 2 companies were registered as biodiesel suppliers; in 1999, that figure had climbed to 13. Together, these companies have invested millions of dollars in developing biodiesel manufacturing plants. In addition, two major U.S. vehicle manufacturers have

begun biodiesel research initiatives.

Biodiesel is one of the only alternative fuels usable in any conventional diesel engine with little or no modification to the engine or fuel system. More than 40 federal and state fleets are already using biodiesel blends in their existing diesel engines.



## EMISSIONS CHARACTERISTICS\*

Actual emissions will vary with engine design; these numbers reflect the potential reductions offered by a biodiesel blend (B20) and pure biodiesel (B100), relative to conventional diesel.

- Reductions in carbon monoxide emissions of 10 percent (B20) and 50 percent (B100).
- Reductions in particulate emissions of 15 percent (B20) and 70 percent (B100).
- Reductions in total hydrocarbon emissions of 10 percent (B20) and 40 percent (B100).
- Reductions in sulfate emissions of 20 percent (B20) and 100 percent (B100).
- Increases in nitrogen oxide emissions of 2 percent (B20) and 9 percent (B100).
- No change in methane emissions using either B20 or B100.

\* Estimates based on biodiesel’s inherently “cleaner” chemical properties with an engine that takes full advantage of these fuel properties.

To encourage its use, most major diesel engine manufacturers have affirmed that using B20 in their equipment will not void their warranties. Although B100 is also usable in any diesel engine, its use might void warranties.

According to the National Biodiesel Board (NBB), biodiesel can be made available in every state, even if no fueling stations exist. Suppliers can deliver fuel anywhere in the country, either in pure or blended form. Farmers often order biodiesel through cooperatives. A list of fuel marketers can be obtained by contacting NBB.

### AFFORDABILITY

B100 can be purchased for \$1.95 to \$3 per gallon, depending on the feedstock and the supplier. In general, B20 costs 30 to 40 cents more per gallon than conventional diesel. Although biodiesel costs more than petrodiesel, fleet managers can make the switch to alternative fuels without purchasing new vehicles, acquiring new spare parts inventories, rebuilding refueling stations, or hiring new mechanics. In addition, buying biodiesel in bulk quantities decreases the fuel's cost.

### PERFORMANCE

Biodiesel maintains the same payload capacity and range as conventional diesel, and provides similar horsepower, torque, and fuel economy. Biodiesel has a higher cetane number than conventional diesel, which increases the engine's performance. It also serves as a high-quality lubricant

and can enhance the life of heavy-duty engines.

Biodiesel vehicles can have cold start problems relative to petrodiesel, but this is more of an issue for B100 than B20 fuels. For example, B20 freezes at temperatures 3°F to 5°F higher than petrodiesel, but it has been used in upper Wisconsin and Iowa during -25°F weather with no reported problems. B100 will begin to freeze at 25°F, however. Vehicle owners can solve cold start problems with biodiesel in the same manner as with conventionally fueled vehicles (e.g., using engine block or fuel filter heaters or storing the vehicles near or in a building).

### SAFETY

Biodiesel is biodegradable, which means it dissipates quickly after a spill. Biodiesel has a high flashpoint and low volatility so it does not ignite as easily as petrodiesel, which increases the margin of safety in fuel handling. In fact, it degrades four times faster than petrodiesel and is not particularly soluble in water. It is nontoxic, which makes it safe to handle, transport, and store. When blended with petrodiesel, the spill's petrodiesel portion is still a problem, but less so than with 100 percent petrodiesel. As with all vehicles, adequate training is recommended to operate and maintain biodiesel vehicles.

### MAINTENANCE

Maintenance requirements for B20 vehicles and petrodiesel vehicles are the same. B100 does pose a few concerns, however. Biodiesel acts as a sol-

vent to some fuel system components and concrete-lined tanks. This effect can release deposits accumulated on tank walls and pipes from previous diesel fuel storage, initially causing fuel filter clogs. As a result, vehicle owners should change the fuel filter after the first tank of fuel.

In addition, biodiesel will soften and degrade certain types of elastomers and natural rubber compounds over time, which can impact fuel system components such as fuel hoses and fuel pump seals. This is less of a concern with biodiesel blends than with B100. Manufacturers recommend replacing these parts with compatible elastomers. Some newer vehicles have biodiesel-compatible components, but users should contact their vehicle manufacturers for specific information.

### For More Information

**EPA Alternative Fuels Web Site**  
[www.epa.gov/otaq/consumer/fuels/altfuels/altfuels.htm](http://www.epa.gov/otaq/consumer/fuels/altfuels/altfuels.htm)

**National Biodiesel Board**  
1907 Williams Street, Suite B  
P.O. Box 104898  
Jefferson City, MO 65110-4898  
Phone: 573 635-3893 or  
800 841-5849  
Fax: 573 635-7913  
E-mail: [biodiesel@socket.net](mailto:biodiesel@socket.net)  
Web site: [www.biodiesel.org](http://www.biodiesel.org)

**Alternative Fuels Data Center**  
Web site: [www.afdc.nrel.gov](http://www.afdc.nrel.gov)

**National Alternative Fuels Hotline**  
Phone: 800 423-1DOE



## **ISO 14001 CERTIFICATES OF REGISTRATION**





## NSF International Strategic Registrations, Ltd.



A Subsidiary of NSF International  
789 North Dixboro Road, Ann Arbor, Michigan 48105  
(888) NSF-9000

### *Certificate of Registration*

This certifies that the Environmental Management System of  
**MADISON GAS & ELECTRIC COMPANY**

P.O. Box 1231

Madison, WI 53701 USA

has been assessed by NSF-ISR and found to be in conformance to the following standard(s):

**ISO 14001:2004**

#### **Scope of Registration:**

Madison Gas and Electric Co.- Blount Station - Electric Power Generation.

#### **Industrial Classification:**

IAF: 25  
SIC: 4931  
NACE:

Certificate Number: 2Z621-E2  
Certificate Issue Date: 11/12/2005  
Company Initial Date: 09/18/2004  
Registration Date: 09/18/2004  
Expiration Date\*: 09/17/2007



*Christian B. Lupo*  
Christian B. Lupo, General Manager  
NSF-ISR, Ltd.



## NSF International Strategic Registrations, Ltd.

A Subsidiary of NSF International  
789 North Dixboro Road, Ann Arbor, Michigan 48105  
(888) NSF-9000



### *Certificate of Registration*

This certifies that the Environmental Management System of

## Madison Gas & Electric Company

P.O. Box 1231  
Madison, WI 53701 USA

has been assessed by NSF-ISR and found to be in conformance to the following standard(s):

### ISO 14001:1996

#### Scope of Registration:

Madison Gas and Electric Co.- Blount Station - Electric Power Generation.



Environmental Management  
System Registered to  
ISO 14001:1996

Certificate Number:	2Z621-E1
Certificate Issue Date:	09/23/2004
Company Initial Date:	09/18/2004
Registration Date:	09/18/2004
Expiration Date*:	09/17/2007

Kevan P. Lawlor, President  
NSF-ISR



Authorized Registration and Accreditation Marks

This certificate is the property of NSF-ISR and must be returned upon request. \*Company is audited for compliance at regular intervals. To verify registration call (888) NSF-9000 or visit our web site at [www.nsf-isr.org](http://www.nsf-isr.org).

**ENVIRONMENTAL COMPLIANCE & ENGINEERING, INC.**  
**STATEMENT OF QUALIFICATIONS**



# Environmental Compliance & Engineering, Inc.

## PROFILE

### Introduction

Environmental Compliance & Engineering, Inc. (ECE) was established in February, 1995 to provide engineering and environmental consulting services to the industrial, commercial and legal community. ECE is a general practitioner in the regulatory compliance field with a special area of expertise in the electroplating industry. ECE has conducted over 330 Environmental Compliance audits for various industries. Other services offered by ECE includes, but is not limited to the following: Air Permitting; Air Emission Inventories; Title V permit application preparation; Spill Prevention Control & Countermeasure plan preparation; NPDES Wastewater Discharge permitting, Storm Water permitting and Storm Water Pollution Prevention Plan preparation; SARA Title III, Tier II and Form R preparation; Phase I Site Assessments; RCRA Annual Report preparation; RCRA, SARA and Storm Water training.

### Client List

Abbott Laboratories, Inc.	Hawk Corporation
Acutus Gladwin Corporation	Hoffman Plating
Adirondack Environmental Services, Inc.	Allen A. Kacenjar, Attorney at Law
Air Systems, Inc.	Krueger International
Alta Consulting, Inc.	McLaren/Hart Environmental Eng, Inc.
Anheuser-Busch, Inc.	Mercury Capital
Aurora Plastics, Inc.	Metal Container Corp.
Baker & Hostetler	Millcraft SMS Services
Busch Entertainment Companies (SeaWorld, Busch Gardens)	NPC Dehydrators, Inc.
Cantex, Inc.	Partners Environmental
Calfee, Halter & Griswold	PPG Industries
Cleveland Steel Container	Rogers & Wells
Commercial Anodizing Company, Inc.	Sandusky Limited
Eagle Snacks, Inc.	Sara Lee Corporation
The Earthgrains Company, Inc.	Shearer's Foods
Eaton Corporation	Smith St. John
Etna-TEC, LTD.	Thermorite Manufacturing, Inc.
Federal Coach	Thermagon, Inc.
Food Service Supplies, Inc.	Troy Laminating
GE Capital Realty Group, Inc.	USA Instruments
GE Consumer Products	Union Tank Car
GE Industrial	Van Breusegen & Associates, Inc.
GE Lighting	Walter & Haverfield
GE Reuter-Stokes	Willow Hill Industries



## DAVID L. LAUBACHER

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A knowledgeable senior environmental engineer with a degree in Chemical Engineering from the University of Detroit in 1973. Background includes a 28-year career in the Chemicals Industry with a variety of positions in the technical and manufacturing fields. For nearly five years has worked as an environmental engineer with a variety of experiences outlined below. Have established and maintained excellent relationships with all levels of manufacturing, corporate and regulatory personnel. Successfully completed the Bureau of Environmental Auditors Certification (BEAC) exam in 2004.

### Professional Experience

#### **Environmental Compliance & Engineering, Inc.**

**2001 – Present**

Experience includes compliance auditing, air permitting, air emission inventory and fee reporting preparation, SARA reporting, development of spill prevention control and countermeasure plans, management of hazardous and solid waste and Phase I site assessments.

Specific to environmental auditing, Mr. Laubacher has conducted over 50 compliance audits in 15 states for industrial clients. Industries audited include large chemical manufacturing plants, automotive and truck component parts manufacturers, electric component and equipment manufacturing, railcar manufacturing and repair, bakeries, aluminum can making and entertainment (theme parks). Protocols covered include hazardous and solid waste, SPCC, storm water, wastewater, drinking water, underground storage tanks, ODC's and EPCRA.

Mr. Laubacher has also helped design and conduct internal auditor training sessions for a Fortune 500 company in 2002, 2003 and 2005.

#### **Oxy Vinyls Corporation**

**1999 - 2001**

Plant team leader of a world scale Vinyl Chloride Manufacturing facility in LaPorte, Texas; responsible for manufacturing, maintenance, and capital spending of a 2.4 billion pound/year VCM facility overseeing approximately 120 employees. Duties include budgeting, cost control, turnaround planning, raw material coordination, health, safety, and environmental compliance and overall production goals.

#### **Geon Corporation**

**1993 – 1999**

Plant Manager for a 600 million pound/year polyvinyl chloride (PVC) manufacturing facility in Deer Park, Texas, overseeing approximately 80 employees. During term as Plant Manager, the facility was successfully expanded by 30%. Plant was frequently recognized for excellence in safety and environmental performance.

Manufacturing Manager for the VCM Plant in LaPorte, Texas; responsible for all aspects of production including budgeting, cost controls, production efficiencies, quality control, environmental compliance and health and safety performance.

#### **BF Goodrich**

**1982 – 1993**

Production Area Supervisor and Production Manager for the VCM plant. Was recognized as a technical expert in the VCM manufacturing process, Goodrich technology, and participated on and led teams that started up VCM plants in Argentina, India, Holland, and Saudi Arabia. Responsibilities included production rates, efficiencies, budgeting, small engineering projects, and safety and environmental performance.

## **THOMAS J. LAUBACHER, ChE.**

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### **Education**

B.S., Chemical Engineering, University of Cincinnati, 1984

### **Registrations**

EIT, Ohio

### **Capabilities**

Air Emission Inventory/Permitting  
SARA Title III Compliance  
RCRA Compliance  
Storm Water Permitting  
NPDES Permitting  
Phase I Environmental Liability Assessments  
Corporate Compliance Auditing  
Corporate and Employee Training  
Wastewater Pretreatment Compliance  
Waste Minimization

- Special area of expertise in all phases of the electroplating industry.

### **Experience Summary**

Mr. Laubacher has over seven years experience in industry, including oil refining, specialty steel manufacturing and the office furniture industry. While working in the office furniture industry, Mr. Laubacher was responsible for overall environmental compliance for five facilities.

Mr. Laubacher has extensive experience in the electroplating industry, including nickel, zinc, copper, brass, hot dipped tin and chromium plating lines. He was responsible for wastewater pretreatment compliance which included cyanide treatment, atmospheric evaporation, cation exchange, nickel recovery and continuous and batch precipitation and filtering systems. Mr. Laubacher was also responsible for an in house employee training program which included the preparation of a training manual to assist employees with plating solution flow patterns, wastewater equipment operations and solution sampling and testing.

Mr. Laubacher has over ten years of experience as a consulting engineer in the regulatory compliance discipline. Mr. Laubacher has extensive experience in performing Phase I environmental compliance and liability assessments. He has conducted over 250 environmental compliance assessments of mainly large industrial/manufacturing facilities. He has also conducted over 60 Phase I liability assessments which consisted of both industrial and commercial properties. Clients include industrial corporations, banks and law firms. As potential liability problems arise through the Phase I assessment, Mr. Laubacher has managed the subsurface investigations to identify site contamination and potential remediation alternatives.

**Key Projects****Air Emission Inventory/Permitting**

Prepared installation and operation permit applications for several industrial clients located in Ohio, Michigan, Indiana, Wisconsin, Pennsylvania, South Carolina and Tennessee. Permit applications included sources such as rotogravure printers, painting operations, gluing operations, cast coaters, engine test stands, snack food industry and several material handling operations of various industries.

Mr. Laubacher has conducted several air emission inventories for industrial clients including a large specialty steel manufacturer, several military bases, a light bulb manufacturer and a large vinyl products manufacturer. The emission inventories were used to determine Title V applicability, permitting requirements and emission fee reporting. Mr. Laubacher also prepared Title V Permit applications for clients in Ohio. Mr. Laubacher has prepared Air Fee Emission Reports for more than 5 clients since 1997 using Ohio's STARSHIP software and Iowa's SPARS software.

**SARA Title III Compliance**

Responsible for SARA Title III compliance including Sections 302, 311, 312 and 313 for the office furniture industry for reporting years 1989 and 1990. Also has performed SARA Title III reporting for reporting years 1991 through 1993 for three large manufacturing facilities and a major automotive manufacturer. Has also performed threshold calculations and prepared Tier II and Form R reports for a large vinyl products manufacturer for reporting years 1994 - 2003 and Tier II and Form R reports for reporting year 1995 - 2000 for a primary steel repair facility. Mr. Laubacher uses a software program to compile data used for inventory and usage threshold calculations.

Gave SARA Section 313 presentation to an audience of 150 at the Motor Vehicle Manufacturers Association. Also made SARA reporting presentations at a Corporate Environmental Seminar attended by 25 plant environmental coordinators in Michigan and an in house auditor training seminar attended by 20 in Ohio.

Performed a 313 chemical usage threshold calculation for a large beverage supplier and uncovered three reportable chemicals that were never previously reported by company personnel. Also performed threshold calculation for large light bulb manufacturer and incubator manufacturer.

**Corporate Environmental Compliance**

Performed duties including hazardous waste disposal and documentation, annual hazardous waste inventory reporting, annual air and water emission reporting, pretreatment compliance with local POTW, air permitting and corporate recycling coordination. He was also involved with the Superfund process where he represented a Potentially Responsible Party in the cost recovery stage of two Superfund sites. He set up a program which virtually eliminated VOC emissions at glue booth spraying operations by using carbon adsorption units.

Mr. Laubacher was also responsible for organizing Corporate Environmental Seminars which included over 25 environmental coordinators of a large greeting card manufacturing company and 15 environmental coordinators at a rail car manufacturing company. He also made three 4-hour presentations on SARA, Clean Air Act, RCRA and Storm Water regulations to a large compressor manufacturing company.

**Plating and Wastewater Pretreatment Compliance**

Installed a nickel recovery system that eliminated nickel from the wastewater discharge through ion exchange. Mr. Laubacher also made a presentation on "Compliance Through Evaporation" at the Wisconsin Wastewater Operators Commission/Federation of Environmental Technologists Seminar.

**Environmental Liability/Compliance Assessments**

Conducted environmental compliance assessments of hazardous waste treatment, storage and disposal facilities in accordance with protocol set by consortium of waste generating industries.

Conducted over 250 environmental compliance audits in 36 states of mostly industrial/manufacturing facilities. Compliance audit clients include a large automotive parts manufacturer with locations throughout the US (40 audits), Aristech Corporation (9 audits), Beverage Manufacturing Company (50 audits), a Baking Company (20 audits), Union Tank Car Company (20 audits), and Acutus-Gladwin Industries (9 audits).

Mr. Laubacher has performed over 65 Phase I site assessments. Phase I site assessments have been performed at light and heavy manufacturing sites, commercial and multi-residential locations. Mr. Laubacher has been a Project Manager for a multi-site acquisition of a miscellaneous eyewear manufacturer, a multi-site acquisition of a baking company and a multi-site acquisition of a health care products manufacturer.

**Spill Prevention Control and Countermeasure**

Mr. Laubacher has prepared or reviewed over 50 Spill Prevention Control and Countermeasure Plans. Plans have been prepared for small facilities such as bakeries, warehouses and small manufacturing operations. Plans have also been prepared or reviewed from large and multi-site facilities including breweries, railcar manufacturers, theme parks and airport hangers.

**Storm Water Compliance**

Project Manager for storm water permitting for a Corporation which included over twelve sites in six states. Also prepared individual permit applications along with Storm Water Pollution Prevention Plans and written Monitoring Programs for a large trucking company which included four sites all in different states.

Project Manager for storm water permitting for a Corporation which included 28 sites in ten states. Project included preparation of Storm Water Pollution Prevention Plans, written Monitoring Programs and on-site storm water sampling training.

Mr. Laubacher made a presentation to an audience of 70 at the Wood Treaters Association Conference regarding storm water sampling techniques and the proposed multi-sector group permit for SIC Code 24.

**RCRA Compliance**

Made three one hour presentations to an audience of over 75 facility environmental coordinators of a large automobile manufacturer at a RCRA Workshop held in Detroit. The presentation included information concerning Manifest/DOT/Land Ban requirements. Also made three, four hour presentations to an audience of approximately 30 at a large Midwestern compressor manufacturer covering RCRA, Clean Air Act, Storm water and SARA. Also performed a two day RCRA training program for a large railcar manufacturing company for personnel from 15 facilities located in the US and Canada in 2000 and 2002.

Performed RCRA hazardous waste training for large quantity generators located in Indiana, Pennsylvania and Ohio. The project consisted of training management staff as well as hourly employees on all three shifts. Provided documentation of job titles and job descriptions as they relate to hazardous waste.

Assisted over 10 clients in performing a waste minimization review of facility operations. Mr. Laubacher's recommendations resulted in the change of generator status (either from LQG to SQG or SQG to CESQG) of more than half of the projects where his waste minimization techniques were employed.

Prepared annual and (biennial) hazardous waste reports from 1993 – 2002 for various industrial clients.

## **CHRISTOPHER H. PARKER**

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A knowledgeable specialist in air pollution control with over 25 years experience as a regulator, consultant and corporate air program leader. Detailed understanding of regulatory programs, manufacturing processes and related air issues. Demonstrated ability to analyze complex permitting/compliance issues, and develop cost-effective, well thought-out solutions. Establishes and maintains constructive relationships with all levels in manufacturing and regulatory settings. Has conducted over 50 compliance air audits and assisted with other protocols including SARA Title III, SPCC and various Health & Safety protocols. Successfully completed the Bureau of Environmental Auditors Certification (BEAC) exam in 2004.

### **Professional Experience**

#### **Environmental Compliance & Engineering, Inc.**

**2003 – Present**

Senior Environmental Specialist who has conducted compliance audits and prepared air permit applications (construction, operating, Title V) for a wide variety of facilities. Prepares and submits actual air emission inventories. Reviews proposed process changes for construction and operating permit implications, providing detailed, accurate guidance. Has prepared accurate & defensible potential emission inventories. Has reviewed and summarized Title V Operating Permits, prepared monitoring/deviation/annual certification reports, and developed monitoring, recordkeeping and reporting plans. Reviewed and summarized final MACT regulations, describing compliance options and obligations. Served as expert witness in air permit appeal hearings. Assisted in preparation of SPCC and Storm Water Pollution Prevention Plans.

#### **GE Lighting – Cleveland, OH**

**1991 – 2003**

Global Air Leader with GE Lighting's corporate EHS function. Responsible for all air programs at 30 facilities in the US and approximately 30 additional facilities world-wide. Provided oversight in the development of all emission inventories, FESOP and Title V permit applications. Managed the development of permit applications for all new/modified sources. Wrote and maintained compliance assurance and self-assessment programs. Served as primary resource for all compliance issues, analyzing data and providing hands-on guidance until ultimate resolution. Managed several after-the-fact PSD applications with no resultant penalties. Became certified in Six Sigma.

#### **Qsource Engineering – Miamisburg, OH**

**1986 – 1991**

Project Manager for a wide variety of projects for diverse industries including paper coaters, printers, auto parts manufacturers, metal and plastic part fabricators/finishers, wood cabinet manufacturers, fluorescent lamp manufacturers, aluminum wheel manufacturers, iron foundries, electric motor manufacturers, etc. Prepared air permit applications for facilities located in Ohio, Indiana, Mississippi, and Arkansas. Prepared RACT, BACT and LAER determinations. Conducted numerous compliance inspections/determinations and permit applications. Prepared SARA Title III Form R Reports. Prepared PTI applications for direct and indirect wastewater discharges. Co-developed SPCC Plans.

#### **Regional Air Pollution Control Agency – Dayton, OH**

**1977 – 1986**

Air Pollution Control Specialist and analyst for a local agency. Responsibilities included performing compliance inspections for assigned facilities, reviewing and making recommendation on air permit applications and assisting facilities comply with new and existing legislation (State and Federal). While an analyst, performed detailed review of new/proposed regulations and provided agency comments to state and federal agencies. Responsible for mobile source and toxic air programs.

## **GLOSSARY OF ACRONYMS**

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APR - Aqueous Phase Reformer

ASTs - Aboveground Storage Tanks

Btu - British Thermal Units

CEAG - Community Environmental Advisory Group

CEMS - Continuous Emissions Monitoring System

CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act

CFCs - Chlorofluorocarbons

CFR - Code of Federal Regulations

CO - Carbon monoxide

CRT - Continuously Regenerating Technology

ECA - Environmental Cooperative Agreement

ECE - Environmental Compliance & Engineering, Inc.

EMS - Environmental Management System

EPA - Environmental Protection Agency

EPCRA - Emergency Planning and Community Right-to-Know Act

ESP - Electrostatic Precipitator

ESW - Environmental Solutions Worldwide

FRP - Facility Response Plan

ISO - International Organization for Standardization

kW - Kilowatt

MGE - Madison Gas and Electric Company

MSDS - Material Safety Data Sheet



MWhr - Megawatt-hour

NESHAPs - National Emission Standards for Hazardous Air Pollutants

NO<sub>x</sub> - Nitrogen oxides

NSPS - New Source Performance Standards

OPA - Oil Pollution Act

PBT - Persistent Bioaccumulative Toxin

PCB - Polychlorinated biphenyl

PDF - Paper-derived fuel

PSD - Prevention of Significant Deterioration

PVC - Polyvinyl Chloride

QA/QC - Quality Assurance/Quality Control

RMP - Risk Management Plan

RTU-HVAC - Roof Top Heating, Ventilating, and Air Conditioning Unit

SARA - Superfund Amendments and Reauthorization Act

SO<sub>2</sub> - Sulfur dioxide

SOQ - Statement of Qualifications

SPCC - Spill Prevention, Control, and Countermeasure Plan

TRI - Toxic Release Inventory

TSCA - Toxic Substances Control Act

USGS - U.S. Geological Survey

USTs - Underground Storage Tanks

VOCs - Volatile organic compounds

WCCF - West Campus Cogeneration Facility

WDNR - Wisconsin Department of Natural Resources

WPDES - Wisconsin Pollution Discharge Elimination System